1986 Campbell River Zooplankton Samples

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ABSTRACT

Brown, T. J., B. A. Kask, C. D. McAllister, M. S. Kotyk, C. D. Levings, and J. S. Macdonald. 1986. 1986 Campbell River zooplankton samples. Can. Data Rep. Fish. Aquat. Sci. 618: 29 p.

In 1986, 2 estuarine, 2 transition and 1 marine zone station were sampled routinely, producing 159 zooplankton samples. These samples have been counted to major taxa, sorted by station and arranged chronologically. The raw counts and numbers m^{-3} are presented here.

RESUME

Brown, T. J., B. A. Kask, C. D. McAllister, M. S. Kotyk, C. D. Levings, and J. S. Macdonald. 1986. 1986 Campbell River zooplankton samples. Can. Data Rep. Fish. Aquat. Sci. 618: 29 p.

En 1986, on a systématiquement échantillonné deux stations en milieu estuarien, deux stations en zone de transition et une station en milieu marin. On a ainsi recueilli 159 échantillons de zooplancton qui ont été dénombrés selon les plus importants taxons, triés selon les stations et disposés en ordre chronologique. Le présent rapport porte sur les données brutes et les nombres par m^3.

INTRODUCTION

The Campbell River estuary is located on the eastern shore of Vancouver Island at latitude 50°03' north and longitude 125°15' west. In 1982 British Columbia Forest Products constructed 4 islands within the Campbell River estuary. These islands were constructed to partially compensate for habitat lost by a new dry land log sort facility and a dredged log pond (Brownlee et al. 1984).

In March of 1982 a study was initiated to assess the utilization and distribution of juvenile salmonids within the estuary and adjacent waters. These studies included water quality, currents, salt wedge intrusion, vegetation, benthic communities, epibenthic and pelagic plankton communities and salmonid utilization. The pelagic zooplankton surveys have been conducted yearly since 1983 (Brown and Kask 1984; 1985 and Brown et al. 1985). The data from the 1986 Campbell River estuary and Discovery Passage zooplankton samples are reported here.

MATERIALS AND METHODS

The zooplankton samples were collected from April 2, 1986 to August 20, 1986 during 11 sampling trips (Table 1). The sampling was carried out in 3 zones (Fig. 1). The estuarine zone was defined as the intertidal area bounded by Tyee Spit. The transition zone included an area of Discovery Passage which could be influenced by the Campbell River and the marine zone included the rest of Discovery Passage.

There were 2 estuarine (7, 15), 2 transition (20, 21) and 1 marine zone station (27) sampled routinely in 1986 producing 159 zooplankton samples (Fig. 2, 3).

Three micro millers (100 μ mesh) in a triangular configuration were used to sample the zooplankton communities (Miller 1961). The micro nets had a mouth diameter of 3.6 cm and were equipped with a General Oceanics flow meter. The nets were towed by a small boat at approximately 2 ms^{-1} for 10 minutes. The volume filtered was calculated using the flow meter and mouth area. This produced 3 replicates for each station occupied. For reasons of data manipulation, the sample replicates were identified by adding 1 and 2 minutes to the observed time of sampling for replicates 2 and 3 respectively (Table 3).

The samples were preserved with 10% formalin and rose bengal. The samples were counted to major taxonomic groups (Table 2) in the lab using an M5 dissecting microscope. When necessary, the sample was split using a Folsom

plankton splitter and the results multiplied by the appropriate correction factor to give total numbers in the sample. One hundred harpacticoids and calanoids were picked, where possible, and placed into vials for later identification to species. These data have been arranged chronologically and sorted by station and zone. This produced 3 tables of raw counts (Tables 3, 5, and 7) and 3 tables of counts m^{-3} (Table 4, 6, and 8). The data includes date, time (PST), station number, net type (micro), tide (ebb or flood) and height in meters, surface temperature (°C), surface salinity (°/..) and volume filtered (m^{-3}).

ACKNOWLEDGMENTS

Thanks are due L. Roscovich for counting the samples as well as entering and editing the data.

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Table 1. Trip dates.

Trip number*	Date
1	April 1-3
2	April 15-17
3	April 29- May 1
4	May 13-15
5	May 27-29
6	June 10-12
7	June 25-27
8	July 8-10
9	July 22-24
10	Aug. 6-8
11	Aug. 19-21

*from Brown et al. in press

Table 2. Abbreviations.

ACAR	Acarinans
AMP	Amphipods
B. CYP	Barnacle cypris
BIVALV	Bivalves
B. NAUP	Barnacle nauplii
CAL	Calanoid copepods
CHAET	Chaetognaths
CHITN	Chitons
CLAD	Cladocerans
C. NAUP	Copepod nauplii
CUMA	Cumaceans
DECA	Decapods
D. ZOE	Decapod zoea
ECTO	Ectoprocts
EGG	Unidentified eggs
E. LAR	Echinoderm larvae
EUP	Euphausids
FISH	Fish
GAST	Gastropods
G. EGG	Gastropod eggs
HARP	Harpacticoid copepods

Table 2 (cont'd).

HYDRA	Hydroids
I. LAR	Insect larvae
INSCT	Insects
ISOPO	Isopods
MEDUS	Medusae
MYSID	Mysids
NEMA	Nematodes
OST	Ostracods
P. COP	Parasitic Copepods
POLY	Polychaetes
SAL	Salinity (°/$_{\text{oo}}$)
SIPH	Siphonophores
STN	Station number
STYPE	Sample type (Micro net)
TANAD	Tanaidaceans
TEMP	Temperature (°C)
TENA	Ctenophores
TUNI	Tunicates
WORM	Worms
VOL	Volume filtered (m^3)

Table 3. Estuarine stations - raw counts.

DATE	TIME	STN	STYPE	TIDE	TEMP	SAL	VOL	HARP	CNAUP	NEMA	CAL	WORM	OST	ACAR	EGG	TUNI	AMP	GAST	ECTO	BNAUP
860402	832	7	MIC	F3.7	5.2	1.1	1.05	4	32	0	209	0	0	0	7	8	0	0	0	6
860402	833	7	MIC	F3.7	5.2	1.1	1.05	1	25	0	107	0	0	0	3	0	1	0	4	1
860402	834	7	MIC	F3.7	5.2	1.1	1.05	2	56	0	233	0	0	0	7	0	1	0	1	1
860417	906	7	MIC	F3.3	7.4	1.3	0.75	4	64	0	293	0	4	2	49	0	0	0	1	45
860417	907	7	MIC	F3.3	7.4	1.3	0.75	1	69	0	320	0	0	0	35	0	0	2	1	52
860417	908	7	MIC	F3.3	7.4	1.3	0.75	3	84	0	427	0	0	0	21	0	0	2	3	71
860430	811	7	MIC	E3.6	6.4	0.8	0.65	40	359	0	183	0	1	0	67	55	0	8	6	64
860430	812	7	MIC	E3.6	6.4	0.8	0.65	82	329	0	214	1	0	1	58	19	5	8	7	39
860430	813	7	MIC	E3.6	6.4	0.8	0.65	42	211	0	154	1	0	2	80	18	1	5	9	27
860515	806	7	MIC	E3.2	9.3	0.7	0.45	32	356	0	264	1	0	0	76	4	0	0	10	212
860515	807	7	MIC	E3.2	9.3	0.7	0.45	13	212	0	115	2	0	1	38	8	0	1	3	70
860515	808	7	MIC	E3.2	9.3	0.7	0.45	11	317	0	150	1	0	1	54	4	0	1	6	91
860529	813	7	MIC	E3.4	10.6	0.5	0.72	16	620	0	1920	4	0	0	148	0	0	0	4	40
860529	814	7	MIC	E3.4	10.6	0.5	0.72	12	736	0	2056	8	0	0	160	0	0	0	6	40
860529	815	7	MIC	E3.4	10.6	0.5	0.72	32	600	0	1788	4	0	0	120	0	0	0	0	20
860612	741	7	MIC	E3.1	13.0	0.6	0.91	14	142	0	179	0	0	0	9	0	0	0	0	12
860612	742	7	MIC	E3.1	13.0	0.6	0.91	7	170	0	184	1	0	0	11	0	0	5	0	9
860612	743	7	MIC	E3.1	13.0	0.6	0.91	3	107	0	125	0	0	0	10	0	0	1	0	2
860626	915	7	MIC	E2.6	14.1	0.4	1.07	1	108	0	84	0	0	0	8	0	0	0	3	0
860626	916	7	MIC	E2.6	14.1	0.4	1.07	6	129	0	88	0	0	0	3	0	0	1	0	1
860626	917	7	MIC	E2.6	14.1	0.4	1.07	8	139	0	81	0	0	0	7	0	0	0	1	0
860710	626	7	MIC	E2.9	13.7	1.0	0.94	3	171	0	39	0	0	0	8	65	1	1	0	6
860710	627	7	MIC	E2.9	13.7	1.0	0.94	8	166	0	90	0	0	0	26	76	0	2	1	11
860710	628	7	MIC	E2.9	13.7	1.0	0.94	8	123	0	58	0	0	0	15	64	0	1	0	8
860724	738	7	MIC	E3.3	16.0	1.6	0.69	11	93	0	14	0	0	0	5	1	0	0	0	4
860724	739	7	MIC	E3.3	16.0	1.6	0.69	4	41	0	15	0	0	3	2	0	0	0	0	2
860724	740	7	MIC	E3.3	16.0	1.6	0.69	6	63	1	13	0	0	2	1	0	0	0	0	0
860808	736	7	MIC	E2.6	17.1	2.0	1.21	11	72	0	31	0	0	0	17	3	0	1	0	2
860808	737	7	MIC	E2.6	17.1	2.0	1.21	4	33	0	24	1	0	1	7	3	0	0	0	4
860808	738	7	MIC	E2.6	17.1	2.0	1.21	12	41	0	41	0	0	0	4	2	0	0	0	7
860820	1637	7	MIC	F3.6	17.8	0.5	0.82	49	139	0	50	0	0	0	13	2	5	5	3	33
860820	1638	7	MIC	F3.6	17.8	0.5	0.82	51	113	0	53	1	0	1	17	1	1	2	3	17
860820	1639	7	MIC	F3.6	17.8	0.5	0.82	45	139	0	41	0	0	0	25	1	0	5	0	19

G.EGG	CLAD	ISOPO	I.LAR	BVALV	EUP	D.ZOE	FISH	POLY	DECA	B.CYP	SIPH
0	1	0	0	0	0	1	1	0	0	0	0
0	1	0	1	0	0	0	1	0	0	0	0
0	7	1	0	0	0	1	3	0	0	0	0
0	59	0	0	0	0	0	1	2	0	0	0
0	62	0	0	0	0	0	0	1	0	0	0
0	54	1	0	0	0	0	2	1	0	0	0
0	4	0	0	0	1	2	0	62	0	2	1
0	0	18	0	0	1	5	0	39	0	3	0
0	5	14	0	0	1	1	0	27	1	0	0
2	8	0	0	0	0	0	1	2	0	0	0
1	10	0	0	0	0	0	0	0	0	0	0
0	10	0	0	0	0	0	1	0	0	0	0
0	132	0	0	0	0	0	0	0	0	0	0
0	244	0	0	0	0	0	0	0	8	0	0
0	280	0	0	4	0	0	0	0	0	0	0
0	100	0	0	0	0	0	0	1	0	1	0
1	97	0	0	0	0	0	0	0	0	0	0
0	94	0	0	0	0	0	0	1	0	0	0
1	72	0	0	0	0	0	0	0	0	0	0
4	78	0	0	0	0	0	0	0	0	0	0
0	93	0	0	0	0	0	0	0	0	2	0
0	14	0	0	0	0	0	0	3	0	0	0
7	17	0	0	0	0	0	0	0	0	1	0
1	8	0	0	0	0	0	0	0	0	0	0
0	4	0	1	0	0	0	1	5	0	0	0
0	1	0	0	0	0	0	0	6	0	0	0
1	8	0	1	0	0	0	0	1	0	0	0
1	11	0	3	0	0	0	0	1	0	1	0
1	5	0	0	0	0	0	0	2	0	0	0
0	7	0	1	0	0	0	0	2	0	0	0
4	5	0	2	0	4	0	0	1	1	1	0
2	7	0	1	0	1	0	0	1	0	0	0
1	5	0	3	0	1	0	0	0	0	0	0

Table 3 (cont'd)

DATE	TIME	STN	STYPE	TIDE	TEMP	SAL	VOL	HARP	CNAUP	NEMA	CAL	WORM	OST	ACAR	EGG	TUNI	AMP	GAST	ECTO	BNAUP
860402	849	15	MIC	F3.7	5.9	3.9	0.94	14	129	0	139	0	0	2	38	0	0	0	3	111
860402	850	15	MIC	F3.7	5.9	3.9	0.94	1	28	0	63	0	0	1	8	1	0	0	1	9
860402	851	15	MIC	F3.7	5.9	3.9	0.94	5	104	0	199	0	0	6	35	1	0	0	4	92
860417	844	15	MIC	F3.3	8.2	3.3	0.75	0	472	0	692	0	0	0	240	0	0	16	24	1660
860417	845	15	MIC	F3.3	8.2	3.3	0.75	12	468	0	516	4	0	0	284	4	0	4	8	1804
860417	846	15	MIC	F3.3	8.2	3.3	0.75	0	272	0	432	0	0	0	200	4	0	6	0	1574
860430	829	15	MIC	E3.6	6.8	2.8	0.64	49	191	0	93	8	0	6	64	24	2	8	10	49
860430	830	15	MIC	E3.6	6.8	2.8	0.64	43	128	0	66	6	0	4	51	17	0	14	5	70
860430	831	15	MIC	E3.6	6.8	2.8	0.64	48	104	0	97	0	0	1	33	8	1	3	6	71
860515	822	15	MIC	E3.1	9.2	1.2	0.52	4	426	0	156	0	1	0	66	1	0	2	4	106
860515	823	15	MIC	E3.1	9.2	1.2	0.52	11	291	0	109	0	0	0	34	4	0	0	2	57
860515	824	15	MIC	E3.1	9.2	1.2	0.52	6	308	0	125	1	0	0	27	3	0	0	1	65
860529	830	15	MIC	E3.4	10.8	0.3	0.85	8	872	0	2620	0	0	4	100	0	0	0	4	52
860529	831	15	MIC	E3.4	10.8	0.3	0.85	0	668	0	2132	8	0	4	84	0	0	0	0	30
860529	832	15	MIC	E3.4	10.8	0.3	0.85	0	748	0	2672	0	0	4	96	0	0	0	0	12
860612	756	15	MIC	E3.0	12.8	2.6	0.98	5	344	0	203	2	0	1	70	54	0	0	0	13
860612	757	15	MIC	E3.0	12.8	2.6	0.98	8	226	0	165	2	0	2	73	48	1	0	0	11
860612	758	15	MIC	E3.0	12.8	2.6	0.98	11	211	0	154	0	0	1	0	40	0	2	2	10
860710	710	15	MIC	E3.0	12.9	4.4	0.86	60	808	0	604	0	0	0	124	288	4	16	0	116
860710	711	15	MIC	E3.0	12.9	4.4	0.86	20	724	0	584	0	0	0	116	220	0	8	0	96
860710	712	15	MIC	E3.0	12.9	4.4	0.86	20	900	0	660	0	0	0	140	372	4	16	4	124
860724	805	15	MIC	E3.4	13.2	1.9	0.80	16	193	0	108	0	0	0	42	5	0	1	0	10
860724	806	15	MIC	E3.4	13.2	1.9	0.80	22	161	0	104	0	0	1	48	2	3	0	0	10
860724	807	15	MIC	E3.4	13.2	1.9	0.80	24	159	0	91	0	0	0	39	3	0	1	0	13
860808	721	15	MIC	E2.9	15.5	6.6	1.23	41	222	0	186	1	1	0	51	9	2	2	1	55
860808	722	15	MIC	E2.9	15.5	6.6	1.23	33	225	0	181	2	0	0	60	19	1	0	1	46
860809	723	15	MIC	E2.9	15.5	6.6	1.23	30	210	0	160	1	0	0	57	17	0	0	0	59
860820	1705	15	MIC	F3.8	17.7	1.8	0.79	11	173	3	33	0	1	0	6	8	0	0	0	16
860820	1706	15	MIC	F3.8	17.7	1.8	0.79	18	184	5	32	0	0	0	7	5	0	0	1	25
860820	1707	15	MIC	F3.8	17.7	1.8	0.79	26	305	11	81	0	1	0	14	19	3	2	5	48

G.EGG	CLAD	ISOPO	I.LAR	BVALV	EUP	CUMA	D.ZOE	FISH	POLY	MEDUS	DECA	B.CYP	SIPH	INSCT
1	21	1	0	0	0	0	0	2	2	0	0	0	0	0
0	4	0	0	0	0	0	0	0	0	1	0	0	0	0
0	29	3	0	0	0	0	0	0	1	0	0	0	0	0
0	228	0	0	0	0	0	0	4	28	0	0	0	0	0
0	176	0	0	0	0	0	0	0	20	0	0	0	0	0
6	206	0	0	0	0	0	0	0	10	0	2	0	0	0
0	11	9	0	0	0	0	6	0	17	0	0	6	1	1
1	4	10	0	0	1	1	5	2	20	1	0	2	0	0
0	5	4	0	0	1	1	6	1	15	0	0	1	0	0
1	42	0	0	0	0	0	0	0	5	0	0	0	0	0
0	36	0	0	0	0	0	0	0	4	1	0	0	0	0
0	30	2	0	0	0	0	0	0	3	1	0	0	0	0
0	420	0	4	0	0	0	0	0	0	0	0	0	0	0
0	480	0	4	0	0	0	0	0	0	0	0	0	0	0
0	488	0	0	0	0	0	0	0	0	0	0	0	0	0
23	380	0	1	0	0	0	0	0	0	0	0	2	0	0
23	299	0	0	0	0	0	0	0	0	0	0	1	0	0
19	290	0	0	0	0	0	0	0	0	0	0	1	0	0
24	124	0	0	4	0	0	0	0	12	0	0	4	0	0
16	104	0	0	0	0	0	0	0	12	0	0	0	0	0
52	108	0	0	0	4	0	0	0	16	0	0	0	0	0
2	33	0	1	0	0	0	0	0	2	0	0	0	0	0
6	24	0	0	0	0	0	0	0	5	0	0	0	0	0
7	18	0	0	0	0	0	0	0	3	0	0	0	0	0
7	9	0	1	0	0	0	0	0	1	0	0	0	0	0
9	8	0	1	0	0	0	0	0	2	0	0	0	0	0
18	13	0	2	0	0	0	0	0	0	0	0	0	1	0
0	11	0	2	0	0	0	0	0	4	0	0	0	0	0
1	17	0	1	0	0	0	0	0	2	0	0	0	0	0
0	12	0	1	0	0	0	0	0	12	0	0	1	0	0

Table 4. Estuarine stations - numbers m^{-3}.

DATE	TIME	STN	STYPE	TIDE	TEMP	SAL	VOL	HARP	CNAUP	NEMA	CAL	WORM	OST	ACAR	EGG	TUNI	AMP	GAST	ECTO	BNAUP
860402	832	7	MIC	F3.7	5.2	1.1	1.05	3.8	30.5	0.0	199.0	0.0	0.0	0.0	6.7	7.6	0.0	0.0	0.0	5.7
860402	833	7	MIC	F3.7	5.2	1.1	1.05	1.0	23.8	0.0	101.9	0.0	0.0	0.0	2.9	0.0	1.0	0.0	3.8	1.0
860402	834	7	MIC	F3.7	5.2	1.1	1.05	1.9	53.3	0.0	221.9	0.0	0.0	0.0	6.7	0.0	1.0	0.0	1.0	1.0
860417	906	7	MIC	F3.3	7.4	1.3	0.75	5.3	85.3	0.0	390.7	0.0	5.3	2.7	65.3	0.0	0.0	0.0	1.3	60.0
860417	907	7	MIC	F3.3	7.4	1.3	0.75	1.3	92.0	0.0	426.7	0.0	0.0	0.0	46.7	0.0	0.0	2.7	1.3	69.3
860417	908	7	MIC	F3.3	7.4	1.3	0.75	4.0	112.0	0.0	569.3	0.0	0.0	0.0	28.0	0.0	0.0	2.7	4.0	94.7
860430	811	7	MIC	E3.6	6.4	0.8	0.65	61.5	552.3	0.0	281.5	0.0	1.5	0.0	103.1	84.6	0.0	12.3	9.2	98.5
860430	812	7	MIC	E3.6	6.4	0.8	0.65	126.2	506.2	0.0	329.2	1.5	0.0	1.5	89.2	29.2	7.7	12.3	10.8	60.0
860430	813	7	MIC	E3.6	6.4	0.8	0.65	64.6	324.6	0.0	236.9	1.5	0.0	3.1	123.1	27.7	1.5	7.7	13.8	41.5
860515	806	7	MIC	E3.2	9.3	0.7	0.45	71.1	791.1	0.0	586.7	2.2	0.0	0.0	168.9	8.9	0.0	0.0	22.2	471.1
860515	807	7	MIC	E3.2	9.3	0.7	0.45	28.9	471.1	0.0	255.6	4.4	0.0	2.2	84.4	17.8	0.0	2.2	6.7	155.6
860515	808	7	MIC	E3.2	9.3	0.7	0.45	24.4	704.4	0.0	333.3	2.2	0.0	2.2	120.0	8.9	0.0	2.2	13.3	202.2
860529	813	7	MIC	E3.4	10.6	0.5	0.72	22.2	861.1	0.0	2666.7	5.6	0.0	0.0	205.6	0.0	0.0	0.0	5.6	55.6
860529	814	7	MIC	E3.4	10.6	0.5	0.72	16.7	1022.2	0.0	2855.6	11.1	0.0	0.0	222.2	0.0	0.0	0.0	8.3	55.6
860529	815	7	MIC	E3.4	10.6	0.5	0.72	44.4	833.3	0.0	2483.3	5.6	0.0	0.0	166.7	0.0	0.0	0.0	0.0	27.8
860612	741	7	MIC	E3.1	13.0	0.6	0.91	15.4	156.0	0.0	196.7	0.0	0.0	0.0	9.9	0.0	0.0	0.0	0.0	13.2
860612	742	7	MIC	E3.1	13.0	0.6	0.91	7.7	186.8	0.0	202.2	1.1	0.0	0.0	12.1	0.0	0.0	5.5	0.0	9.9
860612	743	7	MIC	E3.1	13.0	0.6	0.91	3.3	117.6	0.0	137.4	0.0	0.0	0.0	11.0	0.0	0.0	1.1	0.0	2.2
860626	915	7	MIC	E2.6	14.1	0.4	1.07	0.9	100.9	0.0	78.5	0.0	0.0	0.0	7.5	0.0	0.0	0.0	2.8	0.0
860626	916	7	MIC	E2.6	14.1	0.4	1.07	5.6	120.6	0.0	82.2	0.0	0.0	0.0	2.8	0.0	0.0	0.9	0.0	0.9
860626	917	7	MIC	E2.6	14.1	0.4	1.07	7.5	129.9	0.0	75.7	0.0	0.0	0.0	6.5	0.0	0.0	0.0	0.9	0.0
860710	626	7	MIC	E2.9	13.7	1.0	0.94	3.2	181.9	0.0	41.5	0.0	0.0	0.0	8.5	69.1	1.1	1.1	0.0	6.4
860710	627	7	MIC	E2.9	13.7	1.0	0.94	8.5	176.6	0.0	95.7	0.0	0.0	0.0	27.7	80.9	0.0	2.1	1.1	11.7
860710	628	7	MIC	E2.9	13.7	1.0	0.94	8.5	130.9	0.0	61.7	0.0	0.0	0.0	16.0	68.1	0.0	1.1	0.0	8.5
860724	738	7	MIC	E3.3	16.0	1.6	0.69	15.9	134.8	0.0	20.3	0.0	0.0	0.0	7.2	1.4	0.0	0.0	0.0	5.8
860724	739	7	MIC	E3.3	16.0	1.6	0.69	5.8	59.4	0.0	21.7	0.0	0.0	4.3	2.9	0.0	0.0	0.0	0.0	2.9
860724	740	7	MIC	E3.3	16.0	1.6	0.69	8.7	91.3	1.4	18.8	0.0	0.0	2.9	1.4	0.0	0.0	0.0	0.0	0.0
860808	736	7	MIC	E2.6	17.1	2.0	1.21	9.1	59.5	0.0	25.6	0.0	0.0	0.0	14.0	2.5	0.0	0.8	0.0	1.7
860808	737	7	MIC	E2.6	17.1	2.0	1.21	3.3	27.3	0.0	19.8	0.8	0.0	0.8	5.8	2.5	0.0	0.0	0.0	3.3
860808	738	7	MIC	E2.6	17.1	2.0	1.21	9.9	33.9	0.0	33.9	0.0	0.0	0.0	3.3	1.7	0.0	0.0	0.0	5.8
860820	1637	7	MIC	F3.6	17.8	0.5	0.82	59.8	169.5	0.0	61.0	0.0	0.0	0.0	15.9	2.4	6.1	6.1	3.7	40.2
860820	1638	7	MIC	F3.6	17.8	0.5	0.82	62.2	137.8	0.0	64.6	1.2	0.0	1.2	20.7	1.2	1.2	2.4	3.7	20.7
860820	1639	7	MIC	F3.6	17.8	0.5	0.82	54.9	169.5	0.0	50.0	0.0	0.0	0.0	30.5	1.2	0.0	6.1	0.0	23.2

G.EG	CLAD	ISOP	I.LA	BVAL	EUP	D.ZO	FISH	POLY	DECA	B.CY	SIPH
0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0
0.0	1.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
0.0	6.7	1.0	0.0	0.0	0.0	1.0	2.9	0.0	0.0	0.0	0.0
0.0	78.7	0.0	0.0	0.0	0.0	0.0	1.3	2.7	0.0	0.0	0.0
0.0	82.7	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0
0.0	72.0	1.3	0.0	0.0	0.0	0.0	2.7	1.3	0.0	0.0	0.0
0.0	6.2	0.0	0.0	0.0	1.5	3.1	0.0	95.4	0.0	3.1	1.5
0.0	0.0	27.7	0.0	0.0	1.5	7.7	0.0	60.0	0.0	4.6	0.0
0.0	7.7	21.5	0.0	0.0	1.5	1.5	0.0	41.5	1.5	0.0	0.0
4.4	17.8	0.0	0.0	0.0	0.0	0.0	2.2	4.4	0.0	0.0	0.0
2.2	22.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	22.2	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0
0.0	183.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	338.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.1	0.0	0.0
0.0	388.9	0.0	0.0	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	109.9	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	1.1	0.0
1.1	106.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	103.3	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0
0.9	67.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.7	72.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	86.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0
0.0	14.9	0.0	0.0	0.0	0.0	0.0	0.0	3.2	0.0	0.0	0.0
7.4	18.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0
1.1	8.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	5.8	0.0	1.4	0.0	0.0	0.0	1.4	7.2	0.0	0.0	0.0
0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	8.7	0.0	0.0	0.0
1.4	11.6	0.0	1.4	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0
0.8	9.1	0.0	2.5	0.0	0.0	0.0	0.0	0.8	0.0	0.8	0.0
0.8	4.1	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0
0.0	5.8	0.0	0.8	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0
4.9	6.1	0.0	2.4	0.0	4.9	0.0	0.0	1.2	1.2	1.2	0.0
2.4	8.5	0.0	1.2	0.0	1.2	0.0	0.0	1.2	0.0	0.0	0.0
1.2	6.1	0.0	3.7	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0

Table 4 (cont'd)

DATE	TIME	STN	STYPE	TIDE	TEMP	SAL	VOL	HARP	CNAUP	NEMA	CAL	WORM	OST	ACAR	EGG	TUNI	AMP	GAST	ECTO	BNAUP
860402	849	15	MIC	F3.7	5.9	3.9	0.94	14.9	137.2	0.0	147.9	0.0	0.0	2.1	40.4	0.0	0.0	0.0	3.2	118.1
860402	850	15	MIC	F3.7	5.9	3.9	0.94	1.1	29.8	0.0	67.0	0.0	0.0	1.1	8.5	1.1	0.0	0.0	1.1	9.6
860402	851	15	MIC	F3.7	5.9	3.9	0.94	5.3	110.6	0.0	211.7	0.0	0.0	6.4	37.2	1.1	0.0	0.0	4.3	97.9
860417	844	15	MIC	F3.3	8.2	3.3	0.75	0.0	629.3	0.0	922.7	0.0	0.0	0.0	320.0	0.0	0.0	21.3	32.0	2213.3
860417	845	15	MIC	F3.3	8.2	3.3	0.75	16.0	624.0	0.0	688.0	5.3	0.0	0.0	378.7	5.3	0.0	5.3	10.7	2405.3
860417	846	15	MIC	F3.3	8.2	3.3	0.75	0.0	362.7	0.0	576.0	0.0	0.0	0.0	266.7	5.3	0.0	8.0	0.0	2098.7
860430	829	15	MIC	E3.6	6.8	2.8	0.64	76.6	298.4	0.0	145.3	12.5	0.0	9.4	100.0	37.5	3.1	12.5	15.6	76.6
860430	830	15	MIC	E3.6	6.8	2.8	0.64	67.2	200.0	0.0	103.1	9.4	0.0	6.3	79.7	26.6	0.0	21.9	7.8	109.4
860430	831	15	MIC	E3.6	6.8	2.8	0.64	75.0	162.5	0.0	151.6	0.0	0.0	1.6	51.6	12.5	1.6	4.7	9.4	110.9
860515	822	15	MIC	E3.1	9.2	1.2	0.52	7.7	819.2	0.0	300.0	0.0	1.9	0.0	126.9	1.9	0.0	3.8	7.7	203.8
860515	823	15	MIC	E3.1	9.2	1.2	0.52	21.2	559.6	0.0	209.6	0.0	0.0	0.0	65.4	7.7	0.0	0.0	3.8	109.6
860515	824	15	MIC	E3.1	9.2	1.2	0.52	11.5	592.3	0.0	240.4	1.9	0.0	0.0	51.9	5.8	0.0	0.0	1.9	125.0
860529	830	15	MIC	E3.4	10.8	0.3	0.85	9.4	1025.9	0.0	3082.4	0.0	0.0	4.7	117.6	0.0	0.0	0.0	4.7	61.2
860529	831	15	MIC	E3.4	10.8	0.3	0.85	0.0	785.9	0.0	2508.2	9.4	0.0	4.7	98.8	0.0	0.0	0.0	0.0	35.3
860529	832	15	MIC	E3.4	10.8	0.3	0.85	0.0	880.0	0.0	3143.5	0.0	0.0	4.7	112.9	0.0	0.0	0.0	0.0	14.1
860612	756	15	MIC	E3.0	12.8	2.6	0.98	5.1	351.0	0.0	207.1	2.0	0.0	1.0	71.4	55.1	0.0	0.0	0.0	13.3
860612	757	15	MIC	E3.0	12.8	2.6	0.98	8.2	230.6	0.0	168.4	2.0	0.0	2.0	74.5	49.0	1.0	0.0	0.0	11.2
860612	758	15	MIC	E3.0	12.8	2.6	0.98	11.2	215.3	0.0	157.1	0.0	0.0	1.0	0.0	40.8	0.0	2.0	2.0	10.2
860710	710	15	MIC	E3.0	12.9	4.4	0.86	69.8	939.5	0.0	702.3	0.0	0.0	0.0	144.2	334.9	4.7	18.6	0.0	134.9
860710	711	15	MIC	E3.0	12.9	4.4	0.86	23.3	841.9	0.0	679.1	0.0	0.0	0.0	134.9	255.8	0.0	9.3	0.0	111.6
860710	712	15	MIC	E3.0	12.9	4.4	0.86	23.3	1046.5	0.0	767.4	0.0	0.0	0.0	162.8	432.6	4.7	18.6	4.7	144.2
860724	805	15	MIC	E3.4	13.2	1.9	0.80	20.0	241.3	0.0	135.0	0.0	0.0	0.0	52.5	6.3	0.0	1.3	0.0	12.5
860724	806	15	MIC	E3.4	13.2	1.9	0.80	27.5	201.3	0.0	130.0	0.0	0.0	1.3	60.0	2.5	3.8	0.0	0.0	12.5
860724	807	15	MIC	E3.4	13.2	1.9	0.80	30.0	198.8	0.0	113.8	0.0	0.0	0.0	48.8	3.8	0.0	1.3	0.0	16.3
860808	721	15	MIC	E2.9	15.5	6.6	1.23	33.3	180.5	0.0	151.2	0.8	0.8	0.0	41.5	7.3	1.6	1.6	0.8	44.7
860808	722	15	MIC	E2.9	15.5	6.6	1.23	26.8	182.9	0.0	147.2	1.6	0.0	0.0	48.8	15.4	0.8	0.0	0.8	37.4
860808	723	15	MIC	E2.9	15.5	6.6	1.23	24.4	170.7	0.0	130.1	0.8	0.0	0.0	46.3	13.8	0.0	0.0	0.0	48.0
860820	1705	15	MIC	F3.8	17.7	1.8	0.79	13.9	219.0	3.8	41.8	0.0	1.3	0.0	7.6	10.1	0.0	0.0	0.0	20.3
860820	1706	15	MIC	F3.8	17.7	1.8	0.79	22.8	232.9	6.3	40.5	0.0	0.0	0.0	8.9	6.3	0.0	0.0	1.3	31.6
860820	1707	15	MIC	F3.8	17.7	1.8	0.79	32.9	386.1	13.9	102.5	0.0	1.3	0.0	17.7	24.1	3.8	2.5	6.3	60.8

G.EG	CLAD	ISOP	I.LA	BVAL	EUP	CUMA	D.ZO	FISH	POLY	MEDU	DECA	B.CY	SIPH	INSC
1.1	22.3	1.1	0.0	0.0	0.0	0.0	0.0	2.1	2.1	0.0	0.0	0.0	0.0	0.0
0.0	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0
0.0	30.9	3.2	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0
0.0	304.0	0.0	0.0	0.0	0.0	0.0	0.0	5.3	37.3	0.0	0.0	0.0	0.0	0.0
0.0	234.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.7	0.0	0.0	0.0	0.0	0.0
8.0	274.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.3	0.0	2.7	0.0	0.0	0.0
0.0	17.2	14.1	0.0	0.0	0.0	0.0	9.4	0.0	26.6	0.0	0.0	9.4	1.6	1.6
1.6	6.3	15.6	0.0	0.0	1.6	1.6	7.8	3.1	31.3	1.6	0.0	3.1	0.0	0.0
0.0	7.8	6.3	0.0	0.0	1.6	1.6	9.4	1.6	23.4	0.0	0.0	1.6	0.0	0.0
1.9	80.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.6	0.0	0.0	0.0	0.0	0.0
0.0	69.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.7	1.9	0.0	0.0	0.0	0.0
0.0	57.7	3.8	0.0	0.0	0.0	0.0	0.0	0.0	5.8	1.9	0.0	0.0	0.0	0.0
0.0	494.1	0.0	4.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	564.7	0.0	4.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	574.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23.5	387.8	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
23.5	305.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
19.4	295.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
27.9	144.2	0.0	0.0	4.7	0.0	0.0	0.0	0.0	14.0	0.0	0.0	4.7	0.0	0.0
18.6	120.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.0	0.0	0.0	0.0	0.0	0.0
60.5	125.6	0.0	0.0	0.0	4.7	0.0	0.0	0.0	18.6	0.0	0.0	0.0	0.0	0.0
2.5	41.3	0.0	1.3	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0
7.5	30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.3	0.0	0.0	0.0	0.0	0.0
8.8	22.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	0.0	0.0	0.0	0.0	0.0
5.7	7.3	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0
7.3	6.5	0.0	0.8	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0
14.6	10.6	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0
0.0	13.9	0.0	2.5	0.0	0.0	0.0	0.0	0.0	5.1	0.0	0.0	0.0	0.0	0.0
1.3	21.5	0.0	1.3	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0
0.0	15.2	0.0	1.3	0.0	0.0	0.0	0.0	0.0	15.2	0.0	0.0	1.3	0.0	0.0

Table 5. Transition stations - raw counts.

DATE	TIME	STN	STYPE	TIDE	TEMP	SAL	VOL	HARP	CNAUP	CAL	WORM	OST	ACAR	EGG	TUNI	AMP	GAST	ECTO	BNAUP
860402	1505	20	MIC	E1.8	7.9	32.0	0.86	10	361	345	0	0	1	211	24	1	7	147	394
860402	1506	20	MIC	E1.8	7.9	32.0	0.86	6	152	151	0	0	0	155	10	0	2	68	201
860402	1507	20	MIC	E1.8	7.9	32.0	0.86	9	285	401	0	0	0	427	27	0	13	186	781
860416	1100	20	MIC	E2.3	7.9	29.6	0.98	4	462	738	8	0	0	424	96	0	64	194	3524
860416	1101	20	MIC	E2.3	7.9	29.6	0.98	48	856	1656	0	8	0	610	192	4	48	448	8688
860416	1102	20	MIC	E2.3	7.9	29.6	0.98	8	760	832	0	0	0	554	144	0	64	224	7296
860430	848	20	MIC	E3.5	7.7	31.5	0.68	23	588	297	2	5	0	152	78	2	11	75	135
860430	849	20	MIC	E3.5	7.7	31.5	0.68	21	525	319	0	3	1	159	66	0	13	74	140
860430	850	20	MIC	E3.5	7.7	31.5	0.68	18	527	310	1	5	1	176	51	2	12	73	153
860514	1256	20	MIC	E1.5	9.8	31.5	0.81	14	974	572	0	4	0	252	140	2	18	36	232
860514	1257	20	MIC	E1.5	9.8	31.5	0.81	14	968	498	0	0	0	266	126	4	4	34	338
860514	1258	20	MIC	E1.5	9.8	31.5	0.81	6	836	450	2	0	0	230	98	2	6	30	294
860529	851	20	MIC	E3.3	9.0	31.5	0.64	8	1350	1418	2	4	0	326	62	0	12	12	142
860529	852	20	MIC	E3.3	9.0	31.5	0.64	30	1812	1472	2	4	0	300	98	0	8	6	234
860529	853	20	MIC	E3.3	9.0	31.5	0.64	14	1700	1344	2	2	0	300	78	0	2	6	218
860611	1441	20	MIC	F1.2	10.9	27.6	0.84	16	4896	4064	0	0	0	944	2656	0	128	16	1248
860611	1442	20	MIC	F1.2	10.9	27.6	0.84	32	6448	4752	48	0	0	1120	3376	0	128	16	1376
860611	1443	20	MIC	F1.2	10.9	27.6	0.84	16	3760	3136	16	0	0	832	1440	0	64	48	1200
860709	1553	20	MIC	F2.6	10.9	29.3	0.98	0	4272	3344	0	0	0	640	1616	0	128	0	368
860709	1554	20	MIC	F2.6	10.9	29.3	0.98	24	3056	3376	0	0	8	1040	1232	0	224	8	512
860709	1555	20	MIC	F2.6	10.9	29.3	0.98	64	5552	5168	0	0	0	1440	2096	8	336	0	1088
860724	852	20	MIC	E2.7	9.3	32.7	0.86	176	624	636	0	2	0	1044	12	8	68	0	744
860724	853	20	MIC	E2.7	9.3	32.7	0.86	92	420	492	0	2	0	840	16	2	36	0	596
860724	854	20	MIC	E2.7	9.3	32.7	0.86	152	720	700	0	4	0	940	16	16	40	0	732
860807	807	20	MIC	E2.4	9.8	33.2	1.14	160	756	686	4	4	0	482	166	6	20	2	432
860807	808	20	MIC	E2.4	9.8	33.2	1.14	194	702	654	2	4	0	400	156	4	16	6	554
860807	809	20	MIC	E2.4	9.8	33.2	1.14	172	780	684	2	0	0	414	186	2	8	8	582
860820	1416	20	MIC	F2.7	9.8	31.0	0.74	376	4496	2056	0	8	0	488	1504	8	48	32	504
860820	1417	20	MIC	F2.7	9.8	31.0	0.74	320	4432	1760	16	0	0	464	1488	16	96	0	640
860820	1418	20	MIC	F2.7	9.8	31.0	0.74	272	4320	2016	8	0	0	688	1152	32	112	0	624

G.EGG	CLAD	ISOPO	I.LAR	BVALV	CHAET	EUP	CUMA	D.ZOE	FISH	POLY	MEDUS	DECA	B.CYP	SIPH	HYDRA	TARDA
1	9	0	0	5	0	0	0	1	0	24	7	2	0	1	0	0
0	8	0	0	0	0	0	0	0	0	16	1	1	0	0	0	0
0	9	0	0	0	0	0	0	0	0	11	18	5	1	1	0	0
2	0	0	0	0	0	0	0	6	0	78	0	0	0	0	0	0
4	20	0	0	0	0	4	0	16	0	216	8	0	0	0	0	0
0	0	0	0	0	0	0	0	0	8	136	0	8	0	0	0	0
1	0	1	0	0	0	2	0	6	0	26	2	0	5	1	0	0
3	0	0	0	0	0	2	0	3	0	27	5	0	2	2	0	0
4	0	1	0	0	1	0	0	2	0	39	4	0	3	0	1	0
8	0	0	0	0	0	0	0	0	4	30	0	2	4	0	0	0
12	0	0	0	0	0	0	0	0	0	22	0	2	0	0	0	0
6	0	0	0	0	0	0	0	10	0	18	2	2	4	0	1	0
20	82	0	0	0	0	0	0	0	0	8	10	0	0	0	0	0
42	56	0	0	0	0	2	8	0	0	16	4	0	2	0	0	0
40	68	0	0	0	0	2	0	0	0	10	10	0	0	0	0	0
32	32	0	0	0	0	0	0	16	0	0	320	0	16	0	1	0
48	0	0	0	0	0	80	0	0	0	128	608	0	0	0	0	0
0	16	0	0	0	0	0	0	32	0	128	256	0	0	0	0	0
0	8	0	0	8	0	0	0	0	0	160	144	8	0	0	0	0
0	0	0	0	40	0	8	0	8	0	208	128	0	0	0	0	0
24	0	0	0	96	0	0	0	0	0	320	176	0	0	0	1	8
72	0	0	0	56	0	0	2	2	0	56	16	2	0	0	2	0
84	0	0	0	30	0	0	0	0	0	64	12	0	0	0	2	0
64	0	0	0	64	0	0	0	0	0	68	12	0	0	0	4	0
132	0	0	0	0	0	0	0	2	0	32	4	0	0	0	0	0
132	0	0	0	0	0	0	0	0	0	28	10	0	4	0	1	0
114	0	0	0	0	0	0	2	2	0	22	10	0	4	2	0	0
40	56	0	0	0	0	24	0	0	0	208	64	0	0	0	0	0
32	0	0	0	0	0	64	0	0	0	224	160	0	0	0	1	0
16	0	0	8	0	0	80	0	8	0	240	112	0	0	0	0	0

Table 5 (cont'd)

DATE	TIME	STN	STYPE	TIDE	TEMP	SAL	VOL	HARP	CNAUP	NEMA	CAL	WORM	OST	ACAR	EGG	TUNI	AMP	GAST	ECTO	BNAUP
860402	1539	21	MIC	E1.6	8.2	32.0	1.12	20	284	0	376	0	4	0	208	20	0	12	120	6228
860402	1540	21	MIC	E1.6	8.2	32.0	1.12	8	160	0	168	0	0	0	144	16	0	8	60	1892
860402	1541	21	MIC	E1.6	8.2	32.0	1.12	52	440	0	548	4	4	0	124	32	8	16	168	9436
860416	1229	21	MIC	E2.1	8.3	32.5	0.79	32	832	0	852	0	0	0	544	80	0	52	72	3480
860416	1230	21	MIC	E2.1	8.3	32.5	0.79	88	944	0	888	0	0	0	458	152	0	45	81	4312
860416	1231	21	MIC	E2.1	8.3	32.5	0.79	28	784	0	820	0	0	0	412	88	4	40	80	3068
860430	907	21	MIC	E3.5	7.6	31.7	0.72	36	612	0	297	2	10	0	301	78	2	20	81	357
860430	908	21	MIC	E3.5	7.6	31.7	0.72	78	814	0	384	8	0	2	298	96	0	30	76	458
860430	909	21	MIC	E3.5	7.6	31.7	0.72	34	718	1	270	0	2	2	264	40	2	28	56	428
860514	1332	21	MIC	E1.3	9.2	31.6	0.75	28	1540	0	476	0	0	0	220	184	0	8	30	464
860514	1333	21	MIC	E1.3	9.2	31.6	0.75	72	1460	0	484	4	0	4	256	140	0	12	44	784
860514	1334	21	MIC	E1.3	9.2	31.6	0.75	64	1212	0	368	4	4	0	196	112	0	20	24	524
860528	913	21	MIC	E2.8	8.7	31.3	1.01	40	700	0	552	4	4	0	240	40	0	8	12	180
860528	914	21	MIC	E2.8	8.7	31.3	1.01	56	1300	0	1136	4	4	0	408	56	4	16	38	472
860528	915	21	MIC	E2.8	8.7	31.3	1.01	48	1068	0	740	0	0	0	300	28	0	16	20	388
860611	1410	21	MIC	F1.0	12.0	29.2	0.88	96	3664	0	2032	0	0	0	880	2880	0	144	64	176
860611	1411	21	MIC	F1.0	12.0	29.2	0.88	80	3264	0	1824	16	0	16	944	2000	0	176	16	224
860611	1412	21	MIC	F1.0	12.0	29.2	0.88	48	4112	0	1536	0	0	0	672	2976	0	96	16	208
860626	1015	21	MIC	E2.2	10.5	30.5	0.62	69	920	0	493	2	2	0	391	52	1	21	1	230
860626	1016	21	MIC	E2.2	10.5	30.5	0.62	81	782	0	398	3	3	0	329	47	1	40	3	235
860626	1017	21	MIC	E2.2	10.5	30.5	0.62	66	833	0	487	0	4	0	385	42	1	39	5	297
860709	1533	21	MIC	F2.0	13.7	28.8	1.00	80	9040	0	8352	0	0	0	2048	2976	0	224	0	608
860709	1534	21	MIC	F2.0	13.7	28.8	1.00	176	6128	0	6080	0	0	0	1520	2576	0	288	16	512
860709	1535	21	MIC	F2.0	13.7	28.8	1.00	144	9920	0	7344	0	0	0	1952	4384	0	368	32	640
860724	911	21	MIC	E2.5	10.0	33.0	0.97	260	680	0	796	0	4	0	732	20	4	28	0	720
860724	912	21	MIC	E2.5	10.0	33.0	0.97	240	756	0	656	0	0	0	428	32	0	72	0	500
860724	913	21	MIC	E2.5	10.0	33.0	0.97	276	728	4	552	0	0	0	404	12	0	76	0	508
860807	828	21	MIC	E2.2	9.9	33.4	1.05	252	2136	0	1068	8	0	4	588	572	12	32	8	1080
860807	829	21	MIC	E2.2	9.9	33.4	1.05	264	1636	0	1196	4	0	0	528	484	4	84	0	1008
860807	830	21	MIC	E2.2	9.9	33.4	1.05	212	1544	0	976	0	0	0	480	460	8	48	4	928
860820	1348	21	MIC	F2.4	10.4	31.3	0.73	144	3624	0	1000	8	0	0	296	944	0	88	48	216
860820	1349	21	MIC	F2.4	10.4	31.3	0.73	156	2636	0	720	12	0	0	300	804	4	76	24	300
860820	1350	21	MIC	F2.4	10.4	31.3	0.73	168	3432	0	1208	0	0	0	440	1096	8	64	24	280

G.EGG	CLAD	ISOPO	BVALV	EUP	CUMA	D.ZOE	FISH	POLY	MEDUS	DECA	B.CYP	SIPH	HYDRA
0	8	0	0	0	0	0	0	380	4	4	0	0	0
0	8	0	0	0	0	4	0	164	8	0	4	0	0
8	0	4	0	0	0	4	8	308	32	0	0	0	0
4	0	0	0	0	0	4	0	632	4	0	0	4	0
18	8	27	0	0	0	0	0	704	0	0	0	0	0
0	4	0	0	0	0	0	0	744	16	4	0	0	0
0	0	0	0	1	1	6	0	30	6	2	3	0	2
4	0	0	0	0	0	0	1	58	10	2	8	0	0
4	0	0	0	2	0	2	1	28	4	2	6	0	0
28	0	0	0	0	0	4	0	92	8	0	4	0	0
20	0	0	0	0	0	4	0	84	12	0	0	0	0
28	0	0	0	0	0	0	0	104	20	0	0	0	0
24	4	0	0	0	0	4	0	16	4	0	0	0	0
36	8	0	0	4	0	4	0	20	0	0	0	0	0
76	4	0	0	0	0	0	0	12	4	0	0	0	1
272	0	0	0	0	0	0	0	112	400	0	0	0	0
272	0	0	0	0	0	16	0	96	320	0	0	0	0
240	16	0	0	0	0	0	0	48	320	0	48	2	0
29	0	0	29	2	0	1	0	62	109	0	5	0	0
37	0	0	35	1	0	0	0	72	74	1	4	1	1
43	0	0	51	3	1	1	0	58	70	0	3	0	0
32	16	0	48	16	0	0	0	128	320	0	0	0	1
160	0	0	80	0	0	0	0	112	256	0	0	0	1
112	0	0	112	32	0	0	0	160	240	0	16	0	0
260	0	0	56	0	0	0	0	48	28	0	0	0	0
216	0	0	72	0	0	0	0	108	24	0	0	1	0
192	0	0	84	0	4	0	0	80	12	0	0	2	0
216	4	0	0	0	0	4	0	100	48	0	4	0	0
216	0	0	0	0	0	4	0	44	42	0	0	0	0
164	0	0	0	4	0	4	0	60	28	4	4	2	1
32	32	0	0	0	0	0	0	232	88	0	0	0	0
48	16	0	0	0	0	0	0	112	56	0	0	0	1
88	32	0	0	16	0	8	0	96	88	0	0	0	2

Table 6. Transition stations - numbers m^{-3}.

DATE	TIME	STN	STYPE	TIDE	TEMP	SAL	VOL	HARP	CNAUP	CAL	WORM	OST	ACAR	EGG	TUNI	AMP	GAST	ECTO	BNAUP
860402	1505	20	MIC	E1.8	7.9	32.0	0.86	11.6	419.8	401.2	0.0	0.0	1.2	245.3	27.9	1.2	8.1	170.9	458.1
860402	1506	20	MIC	E1.8	7.9	32.0	0.86	7.0	176.7	175.6	0.0	0.0	0.0	180.2	11.6	0.0	2.3	79.1	233.7
860402	1507	20	MIC	E1.8	7.9	32.0	0.86	10.5	331.4	466.3	0.0	0.0	0.0	496.5	31.4	0.0	15.1	216.3	908.1
860416	1100	20	MIC	E2.3	7.9	29.6	0.98	4.1	471.4	753.1	8.2	0.0	0.0	432.7	98.0	0.0	65.3	198.0	3595.9
860416	1101	20	MIC	E2.3	7.9	29.6	0.98	49.0	873.5	1689.8	0.0	8.2	0.0	622.4	195.9	4.1	49.0	457.1	8865.3
860416	1102	20	MIC	E2.3	7.9	29.6	0.98	8.2	775.5	849.0	0.0	0.0	0.0	565.3	146.9	0.0	65.3	228.6	7444.9
860430	848	20	MIC	E3.5	7.7	31.5	0.68	33.8	864.7	436.8	2.9	7.4	0.0	223.5	114.7	2.9	16.2	110.3	198.5
860430	849	20	MIC	E3.5	7.7	31.5	0.68	30.9	772.1	469.1	0.0	4.4	1.5	233.8	97.1	0.0	19.1	108.8	205.9
860430	850	20	MIC	E3.5	7.7	31.5	0.68	26.5	775.0	455.9	1.5	7.4	1.5	258.8	75.0	2.9	17.6	107.4	225.0
860514	1256	20	MIC	E1.5	9.8	31.5	0.81	17.3	1202.5	706.2	0.0	4.9	0.0	311.1	172.8	2.5	22.2	44.4	286.4
860514	1257	20	MIC	E1.5	9.8	31.5	0.81	17.3	1195.1	614.8	0.0	0.0	0.0	328.4	155.6	4.9	4.9	42.0	417.3
860514	1258	20	MIC	E1.5	9.8	31.5	0.81	7.4	1032.1	555.6	2.5	0.0	0.0	284.0	121.0	2.5	7.4	37.0	363.0
860529	851	20	MIC	E3.3	9.0	31.5	0.64	12.5	2109.4	2215.6	3.1	6.3	0.0	509.4	96.9	0.0	18.8	18.8	221.9
860529	852	20	MIC	E3.3	9.0	31.5	0.64	46.9	2831.3	2300.0	3.1	6.3	0.0	468.8	153.1	0.0	12.5	9.4	365.6
860529	853	20	MIC	E3.3	9.0	31.5	0.64	21.9	2656.3	2100.0	3.1	3.1	0.0	468.8	121.9	0.0	3.1	9.4	340.6
860611	1441	20	MIC	F1.2	10.9	27.6	0.84	19.0	5828.6	4838.1	0.0	0.0	0.0	1123.8	3161.9	0.0	152.4	19.0	1485.7
860611	1442	20	MIC	F1.2	10.9	27.6	0.84	38.1	7676.2	5657.1	57.1	0.0	0.0	1333.3	4019.0	0.0	152.4	19.0	1638.1
860611	1443	20	MIC	F1.2	10.9	27.6	0.84	19.0	4476.2	3733.3	19.0	0.0	0.0	990.5	1714.3	0.0	76.2	57.1	1428.6
860709	1553	20	MIC	F2.6	10.9	29.3	0.98	0.0	4359.2	3412.2	0.0	0.0	0.0	653.1	1649.0	0.0	130.6	0.0	375.5
860709	1554	20	MIC	F2.6	10.9	29.3	0.98	24.5	3118.4	3444.9	0.0	0.0	8.2	1061.2	1257.1	0.0	228.6	8.2	522.4
860709	1555	20	MIC	F2.6	10.9	29.3	0.98	65.3	5665.3	5273.5	0.0	0.0	0.0	1469.4	2138.8	8.2	342.9	0.0	1110.2
860724	852	20	MIC	E2.7	9.3	32.7	0.86	204.7	725.6	739.5	0.0	2.3	0.0	1214.0	14.0	9.3	79.1	0.0	865.1
860724	853	20	MIC	E2.7	9.3	32.7	0.86	107.0	488.4	572.1	0.0	2.3	0.0	976.7	18.6	2.3	41.9	0.0	693.0
860724	854	20	MIC	E2.7	9.3	32.7	0.86	176.7	837.2	814.0	0.0	4.7	0.0	1093.0	18.6	18.6	46.5	0.0	851.2
860807	807	20	MIC	E2.4	9.8	33.2	1.14	140.4	663.2	601.8	3.5	3.5	0.0	422.8	145.6	5.3	17.5	1.8	378.9
860807	808	20	MIC	E2.4	9.8	33.2	1.14	170.2	615.8	573.7	1.8	3.5	0.0	350.9	136.8	3.5	14.0	5.3	486.0
860807	809	20	MIC	E2.4	9.8	33.2	1.14	150.9	684.2	600.0	1.8	0.0	0.0	363.2	163.2	1.8	7.0	7.0	510.5
860820	1416	20	MIC	F2.7	9.8	31.0	0.74	508.1	6075.7	2778.4	0.0	10.8	0.0	659.5	2032.4	10.8	64.9	43.2	681.1
860820	1417	20	MIC	F2.7	9.8	31.0	0.74	432.4	5989.2	2378.4	21.6	0.0	0.0	627.0	2010.8	21.6	129.7	0.0	864.9
860820	1418	20	MIC	F2.7	9.8	31.0	0.74	367.6	5837.8	2724.3	10.8	0.0	0.0	929.7	1556.8	43.2	151.4	0.0	843.2

G.EGG	CLAD	ISOP	I.LA	BVAL	CHAE	EUP	CUMA	D.ZO	FISH	POLY	MEDUS	DECA	B.CY	SIPH	HYDR	TARD
1.2	10.5	0.0	0.0	5.8	0.0	0.0	0.0	1.2	0.0	27.9	8.1	2.3	0.0	1.2	0.0	0.0
0.0	9.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.6	1.2	1.2	0.0	0.0	0.0	0.0
0.0	10.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.8	20.9	5.8	1.2	1.2	0.0	0.0
2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.1	0.0	79.6	0.0	0.0	0.0	0.0	0.0	0.0
4.1	20.4	0.0	0.0	0.0	0.0	4.1	0.0	16.3	0.0	220.4	8.2	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.2	138.8	0.0	8.2	0.0	0.0	0.0	0.0
1.5	0.0	1.5	0.0	0.0	0.0	2.9	0.0	8.8	0.0	38.2	2.9	0.0	7.4	1.5	0.0	0.0
4.4	0.0	0.0	0.0	0.0	0.0	2.9	0.0	4.4	0.0	39.7	7.4	0.0	2.9	2.9	0.0	0.0
5.9	0.0	1.5	0.0	0.0	1.5	0.0	0.0	2.9	0.0	57.4	5.9	0.0	4.4	0.0	1.5	0.0
9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.9	37.0	0.0	2.5	4.9	0.0	0.0	0.0
14.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27.2	0.0	2.5	0.0	0.0	0.0	0.0
7.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.3	0.0	22.2	2.5	2.5	4.9	0.0	1.2	0.0
31.3	128.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.5	15.6	0.0	0.0	0.0	0.0	0.0
65.6	87.5	0.0	0.0	0.0	0.0	3.1	12.5	0.0	0.0	25.0	6.3	0.0	3.1	0.0	0.0	0.0
62.5	106.3	0.0	0.0	0.0	0.0	3.1	0.0	0.0	0.0	15.6	15.6	0.0	0.0	0.0	0.0	0.0
38.1	38.1	0.0	0.0	0.0	0.0	0.0	0.0	19.0	0.0	0.0	381.0	0.0	19.0	0.0	1.2	0.0
57.1	0.0	0.0	0.0	0.0	0.0	95.2	0.0	0.0	0.0	152.4	723.8	0.0	0.0	0.0	0.0	0.0
0.0	19.0	0.0	0.0	0.0	0.0	0.0	0.0	38.1	0.0	152.4	304.8	0.0	0.0	0.0	0.0	0.0
0.0	8.2	0.0	0.0	8.2	0.0	0.0	0.0	0.0	0.0	163.3	146.9	8.2	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	40.8	0.0	8.2	0.0	8.2	0.0	212.2	130.6	0.0	0.0	0.0	0.0	0.0
24.5	0.0	0.0	0.0	98.0	0.0	0.0	0.0	0.0	0.0	326.5	179.6	0.0	0.0	0.0	1.0	8.2
83.7	0.0	0.0	0.0	65.1	0.0	0.0	2.3	2.3	0.0	65.1	18.6	2.3	0.0	0.0	2.3	0.0
97.7	0.0	0.0	0.0	34.9	0.0	0.0	0.0	0.0	0.0	74.4	14.0	0.0	0.0	0.0	2.3	0.0
74.4	0.0	0.0	0.0	74.4	0.0	0.0	0.0	0.0	0.0	79.1	14.0	0.0	0.0	0.0	4.7	0.0
115.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	28.1	3.5	0.0	0.0	0.0	0.0	0.0
115.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.6	8.8	0.0	3.5	0.0	0.9	0.0
100.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	1.8	0.0	19.3	8.8	0.0	3.5	1.8	0.0	0.0
54.1	75.7	0.0	0.0	0.0	0.0	32.4	0.0	0.0	0.0	281.1	86.5	0.0	0.0	0.0	0.0	0.0
43.2	0.0	0.0	0.0	0.0	0.0	86.5	0.0	0.0	0.0	302.7	216.2	0.0	0.0	0.0	1.4	0.0
21.6	0.0	0.0	10.8	0.0	0.0	108.1	0.0	10.8	0.0	324.3	151.4	0.0	0.0	0.0	0.0	0.0

Table 6 (cont'd)

DATE	TIME	STN	STYPE	TIDE	TEMP	SAL	VOL	HARP	CNAUP	NEMA	CAL	WORM	OST	ACAR	EGG	TUNI	AMP	GAST	ECTO	BNAUP
860402	1539	21	MIC	E1.6	8.2	32.0	1.12	17.9	253.6	0.0	335.7	0.0	3.6	0.0	185.7	17.9	0.0	10.7	107.1	5560.7
860402	1540	21	MIC	E1.6	8.2	32.0	1.12	7.1	142.9	0.0	150.0	0.0	0.0	0.0	128.6	14.3	0.0	7.1	53.6	1689.3
860402	1541	21	MIC	E1.6	8.2	32.0	1.12	46.4	392.9	0.0	489.3	3.6	3.6	0.0	110.7	28.6	7.1	14.3	150.0	8425.0
860416	1229	21	MIC	E2.1	8.3	32.5	0.79	40.5	1053.2	0.0	1078.5	0.0	0.0	0.0	688.6	101.3	0.0	65.8	91.1	4405.1
860416	1230	21	MIC	E2.1	8.3	32.5	0.79	111.4	1194.9	0.0	1124.1	0.0	0.0	0.0	579.7	192.4	0.0	57.0	102.5	5458.2
860416	1231	21	MIC	E2.1	8.3	32.5	0.79	35.4	992.4	0.0	1038.0	0.0	0.0	0.0	521.5	111.4	5.1	50.6	101.3	3883.5
860430	907	21	MIC	E3.5	7.6	31.7	0.72	50.0	850.0	0.0	412.5	2.8	13.9	0.0	418.1	108.3	2.8	27.8	112.5	495.8
860430	908	21	MIC	E3.5	7.6	31.7	0.72	108.3	1130.6	0.0	533.3	11.1	0.0	2.8	413.9	133.3	0.0	41.7	105.6	636.1
860430	909	21	MIC	E3.5	7.6	31.7	0.72	47.2	997.2	1.4	375.0	0.0	2.8	2.8	366.7	55.6	2.8	38.9	77.8	594.4
860514	1332	21	MIC	E1.3	9.2	31.6	0.75	37.3	2053.3	0.0	634.7	0.0	0.0	0.0	293.3	245.3	0.0	10.7	40.0	618.7
860514	1333	21	MIC	E1.3	9.2	31.6	0.75	96.0	1946.7	0.0	645.3	5.3	0.0	5.3	341.3	186.7	0.0	16.0	58.7	1045.3
860514	1334	21	MIC	E1.3	9.2	31.6	0.75	85.3	1616.0	0.0	490.7	5.3	5.3	0.0	261.3	149.3	0.0	26.7	32.0	698.7
860528	913	21	MIC	E2.8	8.7	31.3	1.01	39.6	693.1	0.0	546.5	4.0	4.0	0.0	237.6	39.6	0.0	7.9	11.9	178.2
860528	914	21	MIC	E2.8	8.7	31.3	1.01	55.4	1287.1	0.0	1124.8	4.0	4.0	0.0	404.0	55.4	4.0	15.8	37.6	467.3
860528	915	21	MIC	E2.8	8.7	31.3	1.01	47.5	1057.4	0.0	732.7	0.0	0.0	0.0	297.0	27.7	0.0	15.8	19.8	384.2
860611	1410	21	MIC	F1.0	12.0	29.2	0.88	109.1	4163.6	0.0	2309.1	0.0	0.0	0.0	1000.0	3272.7	0.0	163.6	72.7	200.0
860611	1411	21	MIC	F1.0	12.0	29.2	0.88	90.9	3709.1	0.0	2072.7	18.2	0.0	18.2	1072.7	2272.7	0.0	200.0	18.2	254.5
860611	1412	21	MIC	F1.0	12.0	29.2	0.88	54.5	4672.7	0.0	1745.5	0.0	0.0	0.0	763.6	3381.8	0.0	109.1	18.2	236.4
860626	1015	21	MIC	E2.2	10.5	30.5	0.62	111.3	1483.9	0.0	795.2	3.2	3.2	0.0	630.6	83.9	1.6	33.9	1.6	371.0
860626	1016	21	MIC	E2.2	10.5	30.5	0.62	130.6	1261.3	0.0	641.9	4.8	4.8	0.0	530.6	75.8	1.6	64.5	4.8	379.0
860626	1017	21	MIC	E2.2	10.5	30.5	0.62	106.5	1343.5	0.0	785.5	0.0	6.5	0.0	621.0	67.7	1.6	62.9	8.1	479.0
860709	1533	21	MIC	F2.0	13.7	28.8	1.00	80.0	9040.0	0.0	8352.0	0.0	0.0	0.0	2048.0	2976.0	0.0	224.0	0.0	608.0
860709	1534	21	MIC	F2.0	13.7	28.8	1.00	176.0	6128.0	0.0	6080.0	0.0	0.0	0.0	1520.0	2576.0	0.0	288.0	16.0	512.0
860709	1535	21	MIC	F2.0	13.7	28.8	1.00	144.0	9920.0	0.0	7344.0	0.0	0.0	0.0	1952.0	4384.0	0.0	368.0	32.0	640.0
860724	911	21	MIC	E2.5	10.0	33.0	0.97	268.0	701.0	0.0	820.6	0.0	4.1	0.0	754.6	20.6	4.1	28.9	0.0	742.3
860724	912	21	MIC	E2.5	10.0	33.0	0.97	247.4	779.4	0.0	676.3	0.0	0.0	0.0	441.2	33.0	0.0	74.2	0.0	515.5
860724	913	21	MIC	E2.5	10.0	33.0	0.97	284.5	750.5	4.1	569.1	0.0	0.0	0.0	416.5	12.4	0.0	78.4	0.0	523.7
860807	828	21	MIC	E2.2	9.9	33.4	1.05	240.0	2034.3	0.0	1017.1	7.6	0.0	3.8	560.0	544.8	11.4	30.5	7.6	1028.6
860807	829	21	MIC	E2.2	9.9	33.4	1.05	251.4	1558.1	0.0	1139.0	3.8	0.0	0.0	502.9	461.0	3.8	80.0	0.0	960.0
860807	830	21	MIC	E2.2	9.9	33.4	1.05	201.9	1470.5	0.0	929.5	0.0	0.0	0.0	457.1	438.1	7.6	45.7	3.8	883.8
860820	1348	21	MIC	F2.4	10.4	31.3	0.73	197.3	4964.4	0.0	1369.9	11.0	0.0	0.0	405.5	1293.2	0.0	120.5	65.8	295.9
860820	1349	21	MIC	F2.4	10.4	31.3	0.73	213.7	3611.0	0.0	986.3	16.4	0.0	0.0	411.0	1101.4	5.5	104.1	32.9	411.0
860820	1350	21	MIC	F2.4	10.4	31.3	0.73	230.1	4701.4	0.0	1654.8	0.0	0.0	0.0	602.7	1501.4	11.0	87.7	32.9	383.6

G.EGG	CLAD	ISOP	BVALV	EUP	CUMA	D.ZO	FISH	POLY	MEDUS	DECA	B.CY	SIPH	HYDR
0.0	7.1	0.0	0.0	0.0	0.0	0.0	0.0	339.3	3.6	3.6	0.0	0.0	0.0
0.0	7.1	0.0	0.0	0.0	0.0	3.6	0.0	146.4	7.1	0.0	3.6	0.0	0.0
7.1	0.0	3.6	0.0	0.0	0.0	3.6	7.1	275.0	28.6	0.0	0.0	0.0	0.0
5.1	0.0	0.0	0.0	0.0	0.0	5.1	0.0	800.0	5.1	0.0	0.0	5.1	0.0
22.8	10.1	34.2	0.0	0.0	0.0	0.0	0.0	891.1	0.0	0.0	0.0	0.0	0.0
0.0	5.1	0.0	0.0	0.0	0.0	0.0	0.0	941.8	20.3	5.1	0.0	0.0	0.0
0.0	0.0	0.0	0.0	1.4	1.4	8.3	0.0	41.7	8.3	2.8	4.2	0.0	2.8
5.6	0.0	0.0	0.0	0.0	0.0	0.0	1.4	80.6	13.9	2.8	11.1	0.0	0.0
5.6	0.0	0.0	0.0	2.8	0.0	2.8	1.4	38.9	5.6	2.8	8.3	0.0	0.0
37.3	0.0	0.0	0.0	0.0	0.0	5.3	0.0	122.7	10.7	0.0	5.3	0.0	0.0
26.7	0.0	0.0	0.0	0.0	0.0	5.3	0.0	112.0	16.0	0.0	0.0	0.0	0.0
37.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	138.7	26.7	0.0	0.0	0.0	0.0
23.8	4.0	0.0	0.0	0.0	0.0	4.0	0.0	15.8	4.0	0.0	0.0	0.0	0.0
35.6	7.9	0.0	0.0	4.0	0.0	4.0	0.0	19.8	0.0	0.0	0.0	0.0	0.0
75.2	4.0	0.0	0.0	0.0	0.0	0.0	0.0	11.9	4.0	0.0	0.0	0.0	1.0
309.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	127.3	454.5	0.0	0.0	0.0	0.0
309.1	0.0	0.0	0.0	0.0	0.0	18.2	0.0	109.1	363.6	0.0	0.0	0.0	0.0
272.7	18.2	0.0	0.0	0.0	0.0	0.0	0.0	54.5	363.6	0.0	54.5	2.3	0.0
46.8	0.0	0.0	46.8	3.2	0.0	1.6	0.0	100.0	175.8	0.0	8.1	0.0	0.0
59.7	0.0	0.0	56.5	1.6	0.0	0.0	0.0	116.1	119.4	1.6	6.5	1.6	1.6
69.4	0.0	0.0	82.3	4.8	1.6	1.6	0.0	93.5	112.9	0.0	4.8	0.0	0.0
32.0	16.0	0.0	48.0	16.0	0.0	0.0	0.0	128.0	320.0	0.0	0.0	0.0	1.0
160.0	0.0	0.0	80.0	0.0	0.0	0.0	0.0	112.0	256.0	0.0	0.0	0.0	1.0
112.0	0.0	0.0	112.0	32.0	0.0	0.0	0.0	160.0	240.0	0.0	16.0	0.0	0.0
268.0	0.0	0.0	57.7	0.0	0.0	0.0	0.0	49.5	28.9	0.0	0.0	0.0	0.0
222.7	0.0	0.0	74.2	0.0	0.0	0.0	0.0	111.3	24.7	0.0	0.0	1.0	0.0
197.9	0.0	0.0	86.6	0.0	4.1	0.0	0.0	82.5	12.4	0.0	0.0	2.1	0.0
205.7	3.8	0.0	0.0	0.0	0.0	3.8	0.0	95.2	45.7	0.0	3.8	0.0	0.0
205.7	0.0	0.0	0.0	0.0	0.0	3.8	0.0	41.9	40.0	0.0	0.0	0.0	0.0
156.2	0.0	0.0	0.0	3.8	0.0	3.8	0.0	57.1	26.7	3.8	3.8	1.9	1.0
43.8	43.8	0.0	0.0	0.0	0.0	0.0	0.0	317.8	120.5	0.0	0.0	0.0	0.0
65.8	21.9	0.0	0.0	0.0	0.0	0.0	0.0	153.4	76.7	0.0	0.0	0.0	1.4
120.5	43.8	0.0	0.0	21.9	0.0	11.0	0.0	131.5	120.5	0.0	0.0	0.0	2.7

Table 7. Marine stations - raw counts.

DATE	TIME	STN	STYPE	TIDE	TEMP	SAL	VOL	HARP	CNAUP	NEMA	CAL	WORM	OST	ACAR	EGG	TUNI	AMP	GAST	ECTO	BNAUP
860402	1703	27	MIC	E1.0	7.9	32.0	1.14	8	872	0	1536	4	0	0	304	20	0	44	176	2052
860402	1704	27	MIC	E1.0	7.9	32.0	1.14	8	1012	0	1872	0	0	0	268	36	0	40	228	992
860402	1705	27	MIC	E1.0	7.9	32.0	1.14	14	456	0	682	0	0	2	134	44	0	28	64	1098
860416	1530	27	MIC	E1.5	8.7	32.9	0.76	4	3228	0	2708	0	0	0	2444	340	0	40	116	5720
860416	1531	27	MIC	E1.5	8.7	32.9	0.76	4	3120	0	2660	0	0	4	2232	184	0	56	80	5380
860416	1532	27	MIC	E1.5	8.7	32.9	0.76	44	3556	0	2704	0	0	0	2524	248	0	56	76	7392
860430	930	27	MIC	E3.3	7.8	31.9	0.65	20	1718	0	1360	0	8	0	392	24	0	18	110	534
860430	931	27	MIC	E3.3	7.8	31.9	0.65	20	1516	0	1104	0	4	0	302	64	4	16	68	396
860430	932	27	MIC	E3.3	7.8	31.9	0.65	20	1536	0	1052	0	8	0	316	32	4	32	76	384
860514	1447	27	MIC	F1.1	8.4	31.9	0.61	28	1940	0	936	0	0	0	288	184	0	20	16	1080
860514	1448	27	MIC	F1.1	8.4	31.9	0.61	32	2908	0	1504	0	4	0	1056	268	0	36	32	1348
860514	1449	27	MIC	F1.1	8.4	31.9	0.61	36	2664	0	1172	0	0	0	928	224	4	36	40	956
860528	845	27	MIC	E3.1	9.0	25.0	0.82	2	1325	0	910	1	0	0	80	20	1	1	22	139
860528	846	27	MIC	E3.1	9.0	25.0	0.82	2	1506	0	1102	0	0	2	92	16	0	0	22	176
860528	847	27	MIC	E3.1	9.0	25.0	0.82	4	1464	0	1056	0	0	0	82	12	0	0	28	214
860611	1258	27	MIC	E0.9	11.6	29.9	0.89	0	10856	0	5240	0	0	0	2120	6696	0	32	24	880
860611	1259	27	MIC	E0.9	11.6	29.9	0.89	0	7880	0	4456	0	0	0	1616	4208	8	72	16	760
860611	1260	27	MIC	E0.9	11.6	29.9	0.89	0	8760	0	4344	0	0	8	1680	5336	0	24	8	776
860626	946	27	MIC	E2.4	9.3	31.5	0.81	28	1549	1	1321	1	2	2	280	43	2	20	1	263
860626	947	27	MIC	E2.4	9.3	31.5	0.81	16	1518	0	1377	0	2	1	318	30	1	22	3	246
860626	948	27	MIC	E2.4	9.3	31.5	0.81	14	1369	0	1207	0	4	0	291	29	5	20	1	261
860709	1437	27	MIC	F1.5	12.4	28.9	1.04	0	12480	0	11536	32	0	0	3008	3456	16	320	48	1152
860709	1438	27	MIC	F1.5	12.4	28.9	1.04	8	7422	0	8704	16	0	0	2240	2880	0	240	16	976
860709	1439	27	MIC	F1.5	12.4	28.9	1.04	8	8800	0	7248	0	0	0	1648	2816	0	304	16	896
860724	829	27	MIC	E2.8	9.3	33.2	0.88	18	1360	0	1580	0	4	0	532	56	0	52	0	696
860724	830	27	MIC	E2.8	9.3	33.2	0.88	16	554	0	802	0	0	0	302	24	2	38	0	272
860724	831	27	MIC	E2.8	9.3	33.2	0.88	24	1130	0	1430	0	8	0	742	28	0	44	2	530
860807	742	27	MIC	E2.5	9.7	33.2	1.09	74	2036	0	2542	0	2	0	912	226	4	26	10	1218
860807	743	27	MIC	E2.5	9.7	33.2	1.09	58	1870	0	1946	2	6	0	504	196	8	22	6	986
860807	744	27	MIC	E2.5	9.7	33.2	1.09	32	1390	0	1420	2	2	0	394	156	2	30	6	640
860820	1048	27	MIC	E2.6	9.2	31.9	0.95	64	8360	0	3600	0	0	0	1160	2368	16	144	48	336
860820	1049	27	MIC	E2.6	9.2	31.9	0.95	56	2368	0	1352	0	8	0	608	656	0	24	32	208
860820	1050	27	MIC	E2.6	9.2	31.9	0.95	72	6760	0	2944	0	0	8	816	1648	0	88	40	368

G.EGG	CLAD	ISOPO	I.LAR	BVALV	CHAET	EUP	D.ZOE	POLY	MEDUS	DECA	B.CYP	SIPH	HYDRA
0	0	0	0	0	0	4	20	28	24	4	0	0	0
0	8	0	0	0	0	0	12	16	32	0	0	0	0
0	2	0	2	0	0	0	6	40	16	0	0	2	0
16	4	0	0	0	0	4	12	404	20	4	0	0	0
0	0	0	0	0	0	4	4	364	0	8	0	4	0
0	4	0	0	0	0	0	4	312	4	4	0	0	0
4	0	0	0	0	4	4	18	28	4	2	4	0	0
0	0	0	0	0	0	0	28	8	4	0	0	0	0
0	0	0	0	0	0	16	12	20	8	4	0	0	0
4	4	0	0	0	0	0	8	96	0	0	0	0	0
16	0	0	0	0	0	4	8	116	72	0	0	4	0
12	0	0	0	0	0	4	0	88	28	0	0	0	1
3	4	0	0	0	0	0	1	1	5	3	0	1	0
4	6	0	0	0	0	0	0	4	2	2	2	0	0
8	10	2	0	0	0	0	0	2	4	2	0	0	0
16	24	0	0	0	0	56	0	72	1088	0	16	0	0
8	16	0	0	0	0	24	0	56	640	0	8	0	0
24	0	0	0	0	0	40	0	81	920	0	0	0	0
4	5	0	0	1	0	2	4	108	36	4	5	2	1
2	4	0	0	2	0	3	11	119	43	2	4	1	0
4	6	0	0	0	0	3	3	91	39	0	4	1	3
0	0	0	0	0	0	0	16	240	128	0	0	2	0
8	0	0	0	0	0	0	0	320	144	8	0	1	0
0	0	0	0	0	0	0	0	336	112	0	0	0	0
0	0	0	0	2	0	0	2	76	4	0	0	0	0
2	0	0	0	0	0	4	4	24	8	0	0	1	0
0	0	0	0	0	0	4	4	62	4	2	0	1	1
22	0	0	0	6	0	0	2	50	8	2	4	2	1
8	0	0	0	12	0	4	2	38	4	0	0	2	0
14	0	0	0	0	0	0	0	34	10	2	2	0	0
8	88	0	0	8	0	72	27	304	136	0	0	1	1
8	16	0	0	0	0	32	0	80	80	0	0	1	0
0	27	0	0	0	0	0	8	144	128	0	0	0	0

Table 8. Marine stations - numbers m^{-3}.

DATE	TIME	STN	STYPE	TIDE	TEMP	SAL	VOL	HARP	CNAUP	NEMA	CAL	WORM	OST	ACAR	EGG	TUNI	AMP	GAST	ECTO	BNAUP
860402	1703	27	MIC	E1.0	7.9	32.0	1.14	7.0	764.9	0.0	1347.4	3.5	0.0	0.0	266.7	17.5	0.0	38.6	154.4	1800.0
860402	1704	27	MIC	E1.0	7.9	32.0	1.14	7.0	887.7	0.0	1642.1	0.0	0.0	0.0	235.1	31.6	0.0	35.1	200.0	870.2
860402	1705	27	MIC	E1.0	7.9	32.0	1.14	12.3	400.0	0.0	598.2	0.0	0.0	1.8	117.5	38.6	0.0	24.6	56.1	963.2
860416	1530	27	MIC	E1.5	8.7	32.9	0.76	5.3	4247.4	0.0	3563.2	0.0	0.0	0.0	3215.8	447.4	0.0	52.6	152.6	7526.3
860416	1531	27	MIC	E1.5	8.7	32.9	0.76	5.3	4105.3	0.0	3500.0	0.0	0.0	5.3	2936.8	242.1	0.0	73.7	105.3	7078.9
860416	1532	27	MIC	E1.5	8.7	32.9	0.76	57.9	4678.9	0.0	3557.9	0.0	0.0	0.0	3321.1	326.3	0.0	73.7	100.0	9726.3
860430	930	27	MIC	E3.3	7.8	31.9	0.65	30.8	2643.1	0.0	2092.3	0.0	12.3	0.0	603.1	36.9	0.0	27.7	169.2	821.5
860430	931	27	MIC	E3.3	7.8	31.9	0.65	30.8	2332.3	0.0	1698.5	0.0	6.2	0.0	464.6	98.5	6.2	24.6	104.6	609.2
860430	932	27	MIC	E3.3	7.8	31.9	0.65	30.8	2363.1	0.0	1618.5	0.0	12.3	0.0	486.2	49.2	6.2	49.2	116.9	590.8
860514	1447	27	MIC	F1.1	8.4	31.9	0.61	45.9	3180.3	0.0	1534.4	0.0	0.0	0.0	472.1	301.6	0.0	32.8	26.2	1770.5
860514	1448	27	MIC	F1.1	8.4	31.9	0.61	52.5	4767.2	0.0	2465.6	0.0	6.6	0.0	1731.1	439.3	0.0	59.0	52.5	2209.8
860514	1449	27	MIC	F1.1	8.4	31.9	0.61	59.0	4367.2	0.0	1921.3	0.0	0.0	0.0	1521.3	367.2	6.6	59.0	65.6	1567.2
860528	845	27	MIC	E3.1	9.0	25.0	0.82	2.4	1615.9	0.0	1109.8	1.2	0.0	0.0	97.6	24.4	1.2	1.2	26.8	169.5
860528	846	27	MIC	E3.1	9.0	25.0	0.82	2.4	1836.6	0.0	1343.9	0.0	0.0	2.4	112.2	19.5	0.0	0.0	26.8	214.6
860528	847	27	MIC	E3.1	9.0	25.0	0.82	4.9	1785.4	0.0	1287.8	0.0	0.0	0.0	100.0	14.6	0.0	0.0	34.1	261.0
860611	1258	27	MIC	E0.9	11.6	29.9	0.89	0.0	12197.8	0.0	5887.6	0.0	0.0	0.0	2382.0	7523.6	0.0	36.0	27.0	988.8
860611	1259	27	MIC	E0.9	11.6	29.9	0.89	0.0	8853.9	0.0	5006.7	0.0	0.0	0.0	1815.7	4728.1	9.0	80.9	18.0	853.9
860611	1260	27	MIC	E0.9	11.6	29.9	0.89	0.0	9842.7	0.0	4880.9	0.0	0.0	9.0	1887.6	5995.5	0.0	27.0	9.0	871.9
860626	946	27	MIC	E2.4	9.3	31.5	0.81	34.6	1912.3	1.2	1630.9	1.2	2.5	2.5	345.7	53.1	2.5	24.7	1.2	324.7
860626	947	27	MIC	E2.4	9.3	31.5	0.81	19.8	1874.1	0.0	1700.0	0.0	2.5	1.2	392.6	37.0	1.2	27.2	3.7	303.7
860626	948	27	MIC	E2.4	9.3	31.5	0.81	17.3	1690.1	0.0	1490.1	0.0	4.9	0.0	359.3	35.8	6.2	24.7	1.2	322.2
860709	1437	27	MIC	F1.5	12.4	28.9	1.04	0.0	12000.0	0.0	11092.3	30.8	0.0	0.0	2892.3	3323.1	15.4	307.7	46.2	1107.7
860709	1438	27	MIC	F1.5	12.4	28.9	1.04	7.7	7136.5	0.0	8369.2	15.4	0.0	0.0	2153.8	2769.2	0.0	230.8	15.4	938.5
860709	1439	27	MIC	F1.5	12.4	28.9	1.04	7.7	8461.5	0.0	6969.2	0.0	0.0	0.0	1584.6	2707.7	0.0	292.3	15.4	861.5
860724	829	27	MIC	E2.8	9.3	33.2	0.88	20.5	1545.5	0.0	1795.5	0.0	4.5	0.0	604.5	63.6	0.0	59.1	0.0	790.9
860724	830	27	MIC	E2.8	9.3	33.2	0.88	18.2	629.5	0.0	911.4	0.0	0.0	0.0	343.2	27.3	2.3	43.2	0.0	309.1
860724	831	27	MIC	E2.8	9.3	33.2	0.88	27.3	1284.1	0.0	1625.0	0.0	9.1	0.0	843.2	31.8	0.0	50.0	2.3	602.3
860807	742	27	MIC	E2.5	9.7	33.2	1.09	67.9	1867.9	0.0	2332.1	0.0	1.8	0.0	836.7	207.3	3.7	23.9	9.2	1117.4
860807	743	27	MIC	E2.5	9.7	33.2	1.09	53.2	1715.6	0.0	1785.3	1.8	5.5	0.0	462.4	179.8	7.3	20.2	5.5	904.6
860807	744	27	MIC	E2.5	9.7	33.2	1.09	29.4	1275.2	0.0	1302.8	1.8	1.8	0.0	361.5	143.1	1.8	27.5	5.5	587.2
860820	1048	27	MIC	E2.6	9.2	31.9	0.95	67.4	8800.0	0.0	3789.5	0.0	0.0	0.0	1221.1	2492.6	16.8	151.6	50.5	353.7
860820	1049	27	MIC	E2.6	9.2	31.9	0.95	58.9	2492.6	0.0	1423.2	0.0	8.4	0.0	640.0	690.5	0.0	25.3	33.7	218.9
860820	1050	27	MIC	E2.6	9.2	31.9	0.95	75.8	7115.8	0.0	3098.9	0.0	0.0	8.4	858.9	1734.7	0.0	92.6	42.1	387.4

G.EG	CLAD	ISOP	I.LA	BVAL	CHAE	EUP	D.ZO	POLY	MEDUS	DECA	B.CY	SIPH	HYDR
0.0	0.0	0.0	0.0	0.0	0.0	3.5	17.5	24.6	21.1	3.5	0.0	0.0	0.0
0.0	7.0	0.0	0.0	0.0	0.0	0.0	10.5	14.0	28.1	0.0	0.0	0.0	0.0
0.0	1.8	0.0	1.8	0.0	0.0	0.0	5.3	35.1	14.0	0.0	0.0	1.8	0.0
21.1	5.3	0.0	0.0	0.0	0.0	5.3	15.8	531.6	26.3	5.3	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	5.3	5.3	478.9	0.0	10.5	0.0	5.3	0.0
0.0	5.3	0.0	0.0	0.0	0.0	0.0	5.3	410.5	5.3	5.3	0.0	0.0	0.0
6.2	0.0	0.0	0.0	0.0	6.2	6.2	27.7	43.1	6.2	3.1	6.2	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.1	12.3	6.2	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	24.6	18.5	30.8	12.3	6.2	0.0	0.0	0.0
6.6	6.6	0.0	0.0	0.0	0.0	0.0	13.1	157.4	0.0	0.0	0.0	0.0	0.0
26.2	0.0	0.0	0.0	0.0	0.0	6.6	13.1	190.2	118.0	0.0	0.0	6.6	0.0
19.7	0.0	0.0	0.0	0.0	0.0	6.6	0.0	144.3	45.9	0.0	0.0	0.0	1.6
3.7	4.9	0.0	0.0	0.0	0.0	0.0	1.2	1.2	6.1	3.7	0.0	1.2	0.0
4.9	7.3	0.0	0.0	0.0	0.0	0.0	0.0	4.9	2.4	2.4	2.4	0.0	0.0
9.8	12.2	2.4	0.0	0.0	0.0	0.0	0.0	2.4	4.9	2.4	0.0	0.0	0.0
18.0	27.0	0.0	0.0	0.0	0.0	62.9	0.0	80.9	1222.5	0.0	18.0	0.0	0.0
9.0	18.0	0.0	0.0	0.0	0.0	27.0	0.0	62.9	719.1	0.0	9.0	0.0	0.0
27.0	0.0	0.0	0.0	0.0	0.0	44.9	0.0	91.0	1033.7	0.0	0.0	0.0	0.0
4.9	6.2	0.0	0.0	1.2	0.0	2.5	4.9	133.3	44.4	4.9	6.2	2.5	1.2
2.5	4.9	0.0	0.0	2.5	0.0	3.7	13.6	146.9	53.1	2.5	4.9	1.2	0.0
4.9	7.4	0.0	0.0	0.0	0.0	3.7	3.7	112.3	48.1	0.0	4.9	1.2	3.7
0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.4	230.8	123.1	0.0	0.0	1.9	0.0
7.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	307.7	138.5	7.7	0.0	1.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	323.1	107.7	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	2.3	0.0	0.0	2.3	86.4	4.5	0.0	0.0	0.0	0.0
2.3	0.0	0.0	0.0	0.0	0.0	4.5	4.5	27.3	9.1	0.0	0.0	1.1	0.0
0.0	0.0	0.0	0.0	0.0	0.0	4.5	4.5	70.5	4.5	2.3	0.0	1.1	1.1
20.2	0.0	0.0	0.0	5.5	0.0	0.0	1.8	45.9	7.3	1.8	3.7	1.8	0.9
7.3	0.0	0.0	0.0	11.0	0.0	3.7	1.8	34.9	3.7	0.0	0.0	1.8	0.0
12.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31.2	9.2	1.8	1.8	0.0	0.0
8.4	92.6	0.0	0.0	8.4	0.0	75.8	28.4	320.0	143.2	0.0	0.0	1.1	1.1
8.4	16.8	0.0	0.0	0.0	0.0	33.7	0.0	84.2	84.2	0.0	0.0	1.1	0.0
0.0	28.4	0.0	0.0	0.0	0.0	0.0	8.4	151.6	134.7	0.0	0.0	0.0	0.0

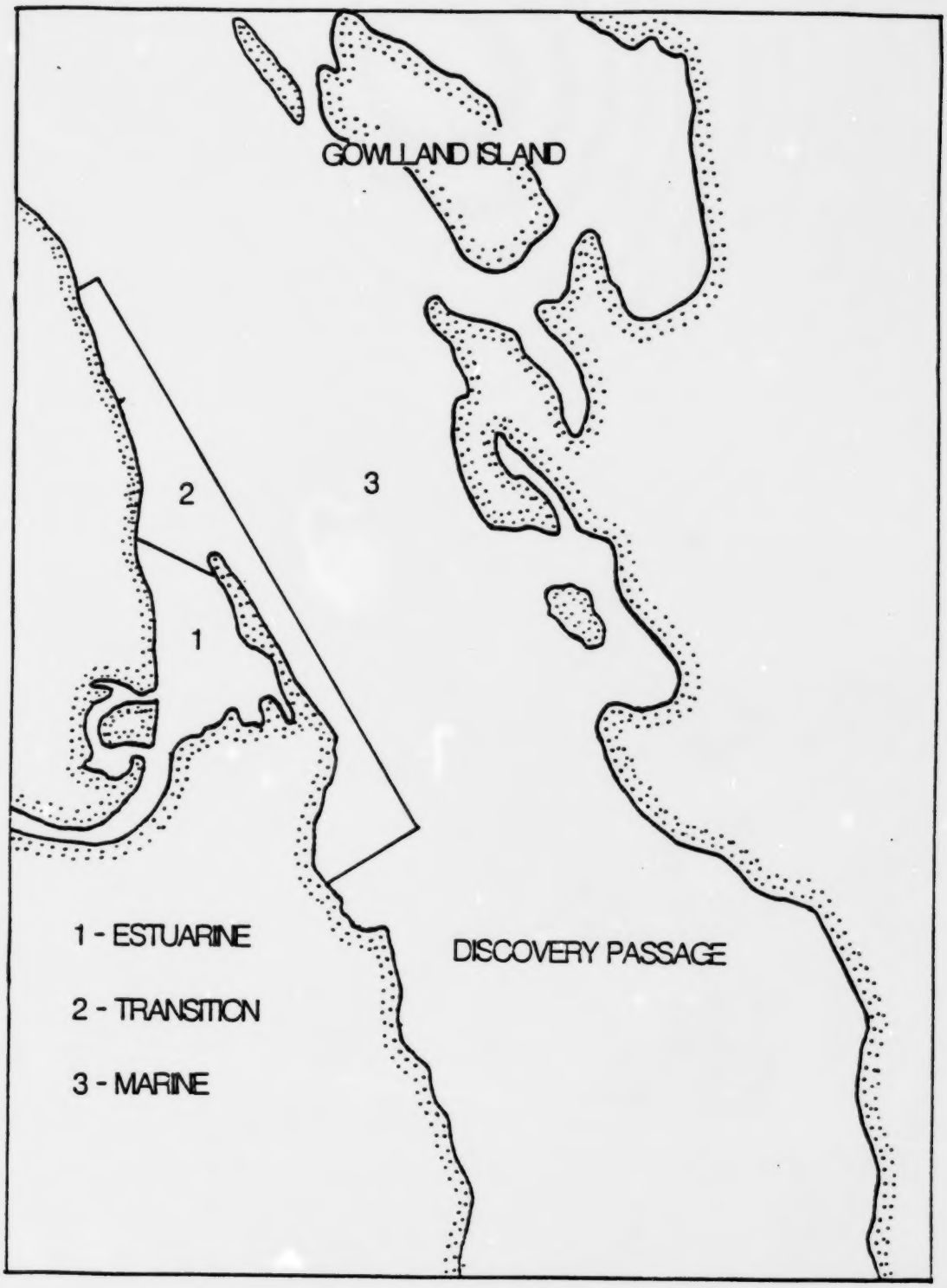

Fig. 1. Estuarine, transition and marine zone locations.

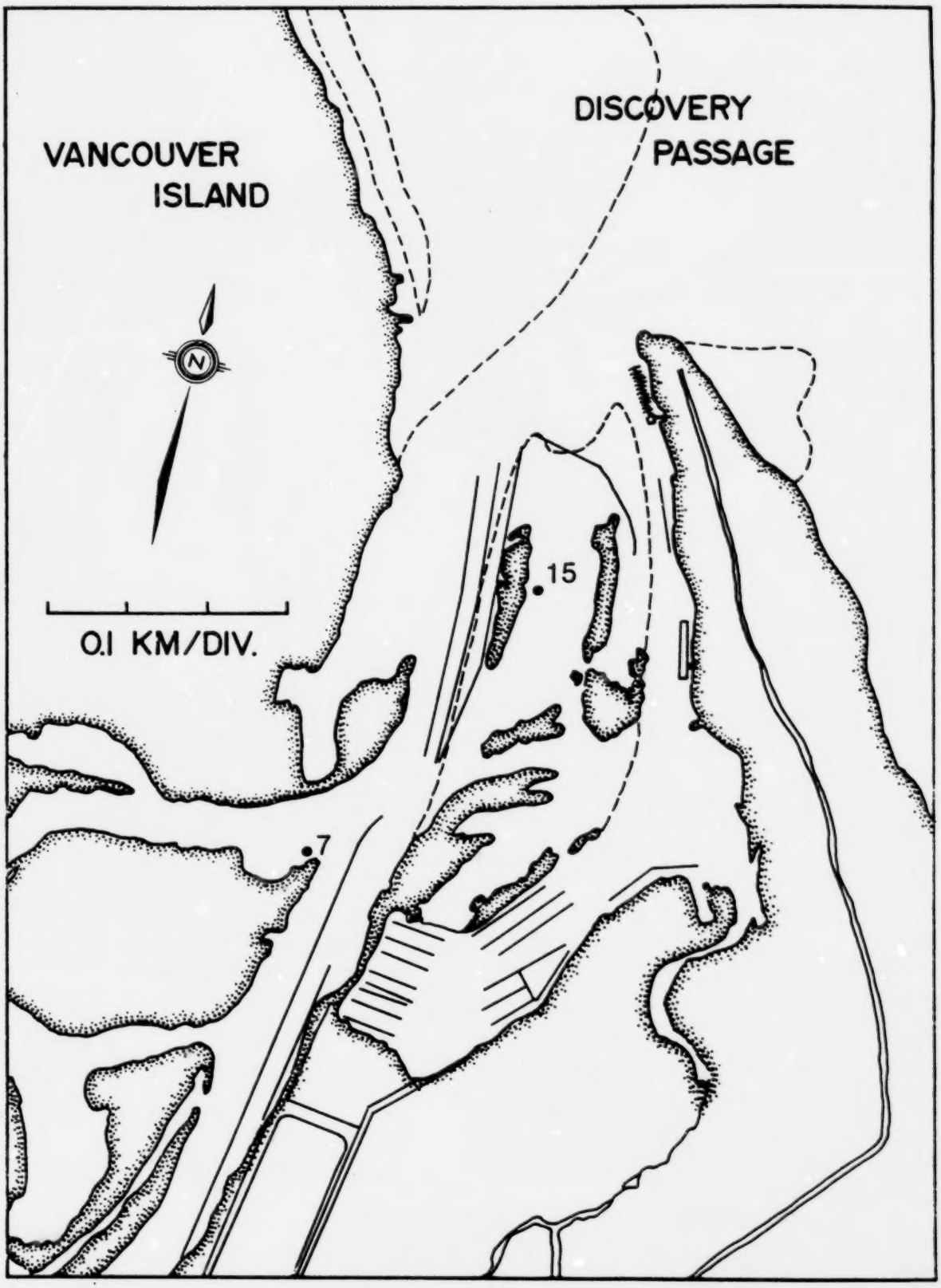

Fig. 2. Estuarine zone station locations.

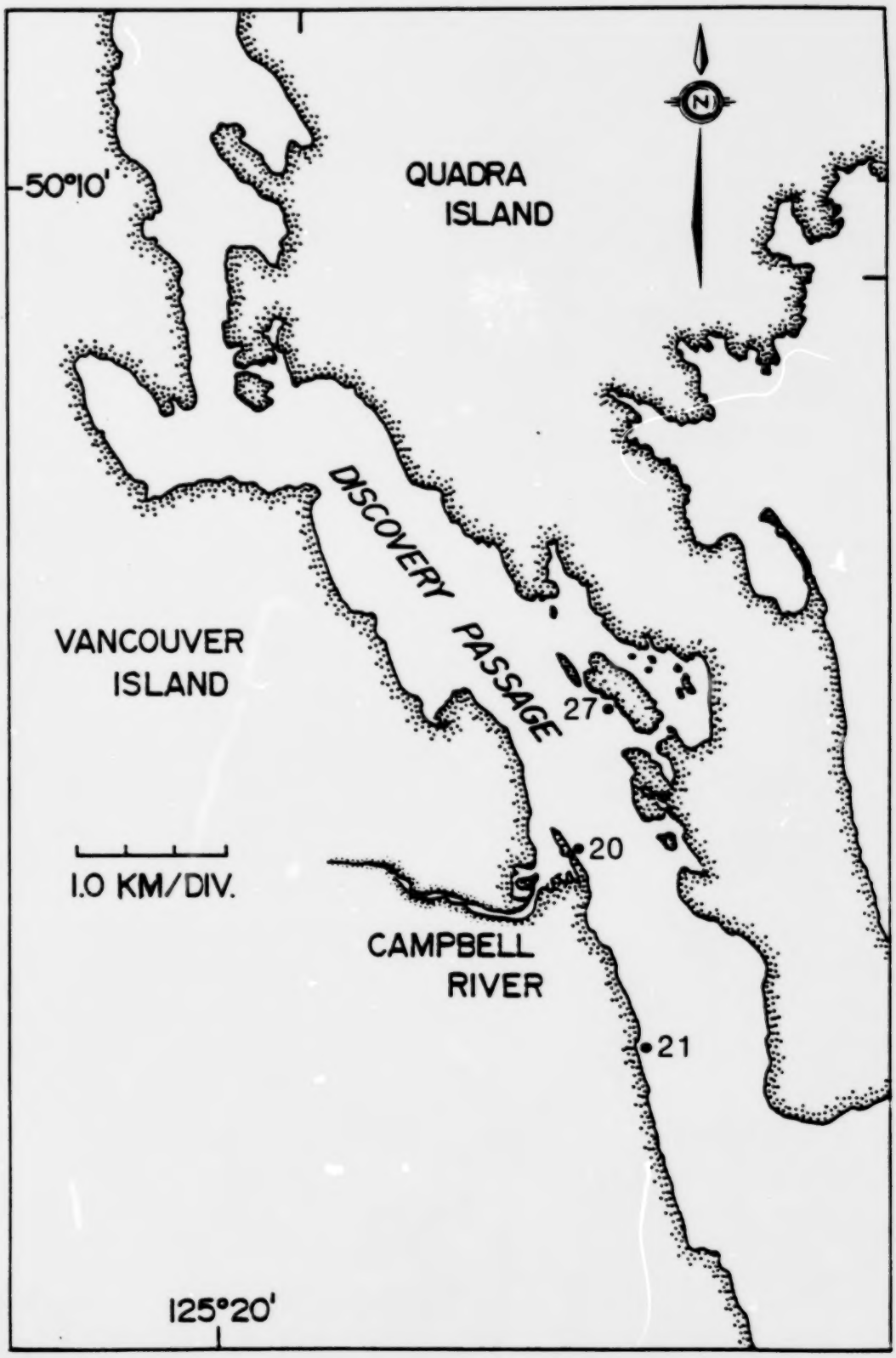

Fig. 3. Transition and marine zone station locations.